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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,345	12/27/2000	Masato Shimakawa	450100-02918	5389
20999	7590	10/14/2005	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			WOZNIAK, JAMES S	
			ART UNIT	PAPER NUMBER
			2655	
DATE MAILED: 10/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/749,345

Applicant(s)

SHIMAKAWA ET AL.

Examiner

James S. Wozniak

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the office action from 4/25/2005, the applicant has submitted an amendment, filed 7/25/2005, arguing to traverse the art rejection based on the limitation regarding synthesizing speech based on synthesizing and personality information (*Amendment, Pages 8-9*). Applicant's arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.

### ***Response to Arguments***

2. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

With respect to **Claim 1**, the applicant argues that Holm et al (*U.S. Patent: 6,260,016*) fails to teach generating speech based on personality information (*Amendment, Pages 8-9*). The examiner points out that Holm et al teaches the use of prosody and synthesis information in performing speech synthesis (*Col. 3, lines 7-40; Col. 8, line 61- Col. 9, line 16; and prior office action, pages 4-5*). The use of prosody information as taught by Holm adds a *human personality* to synthesized speech that conveys a natural, personal interpretation of a text passage (*Col. 2, Lines 20-31*). Thus, prosodic information is considered to be personality information since it adds a human personality to synthesized speech.

Additionally, as noted in the previous office action (*Page 5*), Edatsune (U.S. Patent: 5,802,488 teaches a synthesis vocabulary that changes as a toy robot matures with time (*Col. 12, Lines 13-32*), which, when taken in combination with the teachings of Holm, provides further maturity-based personality information for speech synthesis.

Thus, since Holm teaches the use of prosodic information in providing synthesized speech with a human personality and Edatsune additionally teaches the use of maturity-based personality information, claim 1 remains rejected.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (*Amendment, page 9*), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The examiner further notes that the combination of the references is proper because the motivation for combining the prior art of record can be found in Holm, Tackett et al (U.S. Patent: 6,363,301), and Edatsune, as is noted in the previous office action (*pages 4-6*).

In regards to **claims 10 and 11**, see the response to the arguments directed towards claim 1.

The dependent claims are argued as further limiting rejected independent claims, and thus, also remain rejected.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-14** are rejected under 35 U.S.C. 103(a) unpatentable over Sadakuni (U.S. Patent: 6,446,056) in view of Holm et al. (U.S. Patent No. 6,260,016), hereinafter referenced as Holm in further view of Tackett et al. (U.S. Patent No. 6,363,301), hereinafter referenced as Tackett and Edatsune (U.S. Patent No. 5,802,488).

Regarding **Claims 1, 10, and 11**, Sadakuni discloses an interactive artificial intelligence comprising:

A behavior planning unit (Figure 1, element 7), which reads on the claimed "behavior-state changing means," responsive to a behavior event (column 8, lines 37-38 and 41-53), for changing a behavior state according to a behavior model (behavior modified by emotion; figure 3, element g and figure 12 with column 1, lines 40-43);

An emotion-generating unit (Figure 1, element 3), which reads on the claimed "emotion-state changing means" for changing an emotion according to the emotion model (figure 12); and

Selecting means selecting control information according to at least one of the behavior state (attack; column 5, lines 21-25), but Sadakuni lacks synthesizing means for synthesizing a speech signal wherein a voice of said speech synthesizing apparatus is a function of said speech

synthesizing information and said personality information, a text generating means for generating text in response to said behavior event and substituting means having a number of word substitute dictionaries.

Holm discloses synthesizing means (figure 1) for synthesizing a speech signal (column 4, lines 8-23), to generate a pronunciation of the word,

Wherein a voice synthesizing of said speech synthesizing apparatus is a function of said speech synthesizing information and said personality information (column 3, lines 7-40 with column 8, line 61 - column 9, line 16), to insure a very natural prosody for the sentence.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sadakuni's invention such it discloses synthesizing means for synthesizing a speech signal, to generate synthesized speech, wherein the normally missing prosody information is supplied from the templates based on data extracted from human speech, as taught by Holm (column 8, lines 61-65), to provide more natural sounding prosody through the use of prosody templates (column 1, lines 6-9), but Holm lacks a text generating means for generating text in response to said behavior event and substituting means having a number of word substitute dictionaries.

Tackett discloses a text generating means for generating text (column 20, lines 58-60) in response to said behavior event (user's language inappropriate, so user is kicked off the system by the robot; column 33, lines 8-12), to improve the robots behavior.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sadakuni and Holm with a text generating means for generating text in response to said behavior event, to allow the robot to learn from interaction with user and

improve its own behavior, as taught by Tackett (column 2, lines 65-67), but Tackett lacks substituting means having a number of word substitute dictionaries.

Edatsune does not specifically disclose substituting means, having a number of word substitute dictionaries, for substituting a word or words included in the text with a word or words from the number of word substitute dictionaries in accordance with personality information. However, it is suggested that changing the levels/age is analogous to changing the personality. As the stuffed toy/robot grows up/matures, the vocabulary changes, which constitutes for the substitute dictionaries (column 12, lines 1 3-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sadakuni in combination with Holm and Tackett's apparatus, method and recording medium such that it discloses having a number of word substitute dictionaries, for substituting a word or words included in the text with a word or words from the number of word substitute dictionaries in accordance with personality information, to create a response content level for increasing the level response content as time changes and/or based on the number or types of phrases recognized (column 12, lines 13-32).

Regarding **claim 2**, Sadakuni discloses an interactive artificial intelligence device, but lacks including one or more of the following items: a segment-data ID, a syllable-set ID, a pitch parameter, a parameter of intensity of accent, a parameter of intensity of phrasify, or an utterance-speed parameter.

Holm discloses a speech synthesis system including at least one of a segment- data ID, a syllable-set ID (syllables enunciated), a pitch parameter (pitch rises and falls), a parameter of intensity of accent, a parameter of intensity of phrasify (intensity of syllables', column 2, lines

20-30), or an utterance-speed parameter (speech rate, column 8, line 49), to convey the reader's interpretation of the material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sadakuni's invention such that it includes at least one of a segment-data ID, a syllable-set ID, a pitch parameter, a parameter of intensity of accent, a parameter of intensity of phrasify, and an utterance-speed parameter, to insure a natural prosody, as taught by Holm (column 9, lines 11-16).

Regarding **claim 3**, Sadakuni discloses an interactive artificial intelligence with detecting means for detecting external conditions (Figure 3, step a and column 9, Lines 10- 19).

Regarding **claim 4**, Sadakuni's interactive artificial intelligence discloses holding means for holding individual information (column 6, Line 32 and column 5, Lines 31-43).

Regarding **claim 5**, Sadakuni's interactive artificial intelligence discloses counting means for counting elapsed time (column 4, Lines 20-42).

Regarding **claim 6**, Sadakuni discloses an interactive artificial intelligence device comprising at least one of the number of accumulating means for accumulating the number of times the behavior and emotion state changes (column 2, 14-19 and Lines 58-61).

Regarding **claim 7**, Sadakuni in view of Holm and Tackett discloses everything as claimed in claim 1, but lacks wherein the personality information is included in the control information selected by the selecting means.

Edatsune discloses interactive speech recognition wherein the personality information (response level) is included in the control information selected by the selecting means (column



12, lines 13-32), to recognize speech and produce sounds and actions in response to the recognition result.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sadakuni in combination with Holm and Tackett's apparatus, method and recording medium wherein the personality information is included in the control information selected by the selecting means, to create a response content level for increasing the level response content as time changes and/or based on the number or types of phrases recognized (column 12, lines 13-32).

Holm discloses substituting means for substituting words included in the text (substitute word; column 9, lines 7-11), to insure a natural prosody.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sadakuni's invention such that it discloses substituting means for substituting words included in the text, for providing more natural sounding prosody through the use of prosody templates.

Regarding **claim 8**, Sadakuni discloses an interactive artificial intelligence, but lacks the converting means for converting the style of the text.

Holm discloses converting means for converting the style (prosody) of the text (column 1, lines 29-44).

Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sadakuni's speech synthesizing apparatus method and recording medium, for the purpose of supplying the system with requisite information concerning the number of syllables and stress patterns that fit the given emotion.

Regarding **claim 9**, Sadakuni discloses an interactive artificial intelligence that is a robot (column 1, Lines 48-51 and column 18, Lines 6-7).

Regarding **claims 12-14**, Sadakuni in view of Holm and Tackett discloses an interactive artificial intelligence, but lacks wherein the personality information is representative of one or more of the following items: type, gender, age, temperament, or physical condition.

Edatsune does not specifically disclose the personality information is representative of age, however it is suggested that changing the levels/age is analogous to changing the personality. As the stuffed toy/robot grows up/matures, the vocabulary changes, which constitutes for the substitute dictionaries (column 12, Lines 13-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sadakuni in combination with Holm and Tackett's apparatus, method and recording medium wherein the personality information is representative of one or more of the following items: type, gender, age, temperament, or physical condition, to create a response content level for increasing the level response content as time changes and/or based on the number or types of phrases recognized (column 12, Lines 13-32).

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Hollander (*U.S. Patent: 5,029,214*)- teaches a toy that generates an emotional speech response based on a behavior.

Kurihara et al (*U.S. Patent: 6,072,478*)- teaches a speech synthesis method utilizing a speaking character's attributes.

Gabai et al (*U.S. Patent: 6,160,986*)- teaches an interactive toy having human-like speech with emotional characteristics.

Kamiya et al (*U.S. Patent: 6,175,772*)- teaches a robot that generates synthesized speech according to a behavior state.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak  
9/19/2005



W.R. YOUNG  
PRIMARY EXAMINER